Workshop on Phenotyping Mouse Models of Lung Disease
September 22-27, 2019

Sunday, September 22nd, 2019
Highseas first floor

4:30pm Registration and reception
6:00pm Dinner (Highseas dining room)
7:00pm Orientation and Introductions (Highseas living room)
Wayne Mitzner, Ph.D., John Hopkins Bloomberg School of Public Health
Michael Borchers, Ph.D., University of Cincinnati
Jennifer Corrigan, M.S., The Jackson Laboratory

Monday, September 23rd, 2019: The Mouse and How We Use It

8am – 1:30pm sessions will be held in the Highseas 3rd floor lecture room
1:45pm – 5pm sessions will be held in the GRB Training Lab @ The Jackson Laboratory

7:00am Breakfast (Highseas dining room)
8:00am Welcome
Wayne Mitzner, Ph.D., John Hopkins Bloomberg School of Public Health
8:15am Mouse Models of Lung Disease
Wayne Mitzner, Ph.D., John Hopkins Bloomberg School of Public Health
9:15am Break
9:30am Normal Mouse Cytology and the Role of Immune Cells in Mouse Models of Lung Disease
Michael Borchers, Ph.D., Univ of Cincinnati
10:30am Introduction to Mouse Ventilation Systems
Lennart K.A. Lundblad, Ph.D., Meakins-Christie Labs, McGill University
11:30am Lunch (Highseas dining room)

12:30pm **Mouse Husbandry, Breeding and Genetic Quality Control**
Krista Geister, Ph.D., The Jackson Laboratory

1:30pm Transportation to GRB Training Lab

1:45pm **Hands-on Mouse Techniques: Handling, Restraint & IP Injection**
Kristin Cough, B.S., The Jackson Laboratory

3:15pm **Sampling Techniques: Cardiac Puncture, Mandibular Blood Collection & Bone Marrow Collection**
Michael Borchers, Ph.D., University of Cincinnati
Jennifer Corrigan, M.S., The Jackson Laboratory
Kristin Cough, B.S., The Jackson Laboratory
Jeffrey Loube, B.S., John Hopkins Bloomberg School of Public Health

4:30pm **Blood Smears**
Michael Borchers, Ph.D., University of Cincinnati

5:00pm Transportation to Highseas

6:00pm Dinner (Highseas dining room)

7:00pm **Participant Presentations** (Bring a 10 min PowerPoint presentation of your work.)

**Tuesday, September 24th, 2019: Assessment of Mouse Lung Function**

*8am – 11:15 am sessions will be held in the Highseas 3rd floor lecture room*
*11:30am – 5:30pm sessions will be held in the GRB Training Lab @ The Jackson Laboratory*

7:00am Breakfast (Highseas dining room)

8:00am **Foundations of Lung Function and Assessment with Forced Oscillation**
Lennart K.A. Lundblad, Ph.D., Meakins-Christie Labs, McGill University

9:00am **Lung Volumes, Pressure-Volume Curves, and Lung Diffusing Capacity**
Wayne Mitzner, Ph.D., John Hopkins Bloomberg School of Public Health

9:45am Break

10:00am **Mouse Lung Intubation**
Wayne Mitzner, Ph.D., John Hopkins Bloomberg School of Public Health

10:15 am **Introduction to the Flexivent**
11:15am Transportation to GRB Training Lab
11:30am **Tracheostomy**
   Jeffrey Loube, B.S., John Hopkins Bloomberg School of Public Health
   Wayne Mitzner, Ph.D., John Hopkins Bloomberg School of Public Health
12:30pm Lunch (Roscoes)
1:30pm **Concurrent Rotating Labs**
   - **Flexivent: Tracheostomy and Pressure Volume Curves** (1/2 of class, 2 hrs)
     Annette Robichaud, Ph.D., Stephanie Rosenbaum, Msc., and Danielle Hopkins, Msc., SCIREQ Scientific Respiratory Equipment Inc.
     Lennart K.A. Lundblad, Ph.D., Meakins-Christie Labs, McGill University
   - **Sampling Techniques Continued: Lavage & Cover Slipping** (1/2 of class, 2 hrs)
     Michael Borchers, Ph.D., Univ of Cincinnati
3:30pm Rotate Concurrent Labs
5:30pm Transportation to Highseas
6:00pm Dinner (Highseas dining room)
7:00pm **Participant Presentations** (Bring a 10 min PowerPoint presentation of your work.)

**Wednesday, September 25th, 2019: Generating and Analyzing Pulmonary Mouse Models**

8am – 11:45am sessions will be held in the Highseas 3rd floor lecture room
1pm – 5pm sessions will be held in the GRB Training Lab @ The Jackson Laboratory
7:00am Breakfast (Highseas dining room)
8:00am **Introduction to the Light Microscope and Optimizing Image Acquisition**
   Douglas Taatjes, Ph.D., The University of Vermont
9:00am **Pathology of Mouse Models of Lung Disease**
   Cory Brayton, D.V.M., ACVP, John Hopkins University School of Medicine
10:00am Break
10:15am **Harvest & Fixation Techniques**
   Wayne Mitzner, Ph.D., John Hopkins Bloomberg School of Public Health
10:45am **Introduction to Morphometry/Stereology and Sampling as Applied to the Lung**
   Christian Mühlfeld, Ph.D., Hannover Medical School
11:45am Lunch (Highseas dining room)
12:45pm Transportation to GRB Training Lab
1:00pm **Concurrent Rotating Labs**
- **FlexiVent Dose Response Curves** (½ of class, 1.5 hrs)
  Annette Robichaud, Ph.D., Stephanie Rosenbaum, Msc., and Danielle Hopkins, Msc., SCIREQ Scientific Respiratory Equipment Inc.
  Lennart K.A. Lundblad, Ph.D., Meakins-Christie Labs, McGill University
- **Intubation & Lung Volume Measurement** (¼ of class, 45 min then switch to Lung Harvest & Fixation)
  Wayne Mitzner, Ph.D., John Hopkins Bloomberg School of Public Health
- **Lung Harvest & Fixation** (¼ of class, 45 min then switch to Intubation & Measuring Lung Volume)
  Christian Mühlfeld, Ph.D., Hannover Medical School

2:30pm **Rotate Concurrent Labs**

4:00pm **Slide Review** (Bring your questions and fixed slides for analysis)
*Note: Do NOT bring fresh tissue to The Jackson Laboratory!*
Cory Brayton, D.V.M., ACVP, John Hopkins University School of Medicine
Douglas Taatjes, Ph.D., The University of Vermont

5:00pm Transportation to Highseas

6:00pm Lobster Dinner (Highseas dining room)

**Thursday, September 26th, 2019 - Quantitative Lung Imaging**

*All of todays sessions will be held in the Highseas 3rd floor lecture room*

7:00am Breakfast (Highseas dining room)

8:00am **Practical Exercise in Lung Stereology I: Volume Estimation**
Christian Mühlfeld, Ph.D., Hannover Medical School

9:15am **Practical Exercise in Lung Stereology II: Surface Area Estimation**
Christian Mühlfeld, Ph.D., Hannover Medical School

10:45am Break

11:00am **Considerations for Image Presentation and Imaging Ethics**
Douglas Taatjes, Ph.D., The University of Vermont

12:00pm **Humanized Mice and Patient Derived Xenografts (PDX)**
Brian Soper, Ph.D., The Jackson Laboratory
1:00pm Lunch (Highseas dining room)
2:00pm Free time
6:00pm Dinner (Highseas dining room)

**Friday, September 27th, 2019**

Breakfast and departures (Room check-out is 9:00 A.M.)